Notebook, N-90-01-04.4

This notebook covers the period January 1890-March 1891. All entries are by Edison. The book contains notes relating to numerous mines and methods of ore separation for iron, copper, gold, and nickel. Also included are drawings regarding phonographs, generators, and electrical distribution systems. Near the end of the book are cost calculations for the North American Phonograph Co. The front cover is labeled "#582." The inside front cover is inscribed "#582 T A Edison Jan 4. 90." The pages are unnumbered. Approximately 110 pages have been used.

N-90-01-04.4

#588

TA Edison
Jan 4. 90

Sudbury — Trenton — Cu Fe Ni.
ore plant —

— Notes —

Jany 4 1890

Also Gold + Ni Cu

Cu Au ores —

Manhès expmts conctg FeCu Matte to get rid
Fe Min Res US 1883 p 540 – same page
Garnier, Bessemerizing Nickel Matte

Eugene Hermite Rouen France.
puts Ni Cu oxide from Matte in closed chamber
rotateable, puts ammonia in under pressure
60 lbs sqr inch, amount proportion to ore
rotates 30 @ 60 minutes – after settling,
decants – reammoniates if necessary
Liquid subjected to Electrolysis in closed
Vessels containing Electrodes Carbon +
Cast iron, metals in Solution collects on iron
Caustic Na added to Solution lower resistance.
ammoniates of Cu + Ni formed – Containing
Vessell may be of Cast iron as ammoniates
of Ni Cu dont attackt, further descript see
London Mining Jnl + also p 542 US Geology
1883 —

dead roast powdered matte to form Sulphates
& then dissolve & oxidize Fe by blowing in air or
use bleaching powder to oxidize Iron & form a
Insoluable Ferric Sulphate,

Rivot & Phillips –
Dead roast & while white hot
put in bars of iron to reduce O of CuO
American Encyclopd 693 article Copper

Edison –
Deadroast reduce Cu to metal state
Stir in Lead to form Cu Pb alloy the Fe or
Ni not alloying at the low temperature –
– also by antimony

See what Manhes process is –
also Doetsch Rio Tinto process
persul Fe –

In 1882 US Geology says there is a nickeliferous Limonite ore in Michigan which has produced wonderfully good iron p 416 — also states Iron ore at Antwerp NY contains Ni.

M S Cheney & Roberts – Mass Inst Techn method estimating Ni in pyrrholites & matte phos Ni completely soluble while phos Fe almost insoluble in acetic acid in presence of excess phosphate soda – US Geol 1882 p 417 —

See Ni process Eustis & Howe of Boston - Trans Amer Institute Mining Engrs 1882

1882 US Geolg - says immense deposit pyrites good for SO_4 & Clay & Coosa Co Ala some containing 10 pct Cu not very accessible

1883 US Geo says there are within few miles of Tilly Foster Mine immense deposits Iron not yet developed -

Blue Saphires found near Sparta, Franklin & Vernon = Sussex Co. N.J.

Magnetic Iron Sand West Shore of Lake Champlain -

An Aluminous Magnetic iron ore occurs near Peekskill NY self fluxing not worked immense deposit,

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Wurtz Amer Assn Adv S 1858 + Sillimans Jnl 1859 Report on N Carolina, Gaston & Lincoln Cos N. Ca ore Espelly abundant on Western Slope of Croso Mountain — Covered with gossan

In phillips Work Called Ore deposit
says p 596 -

On north side Island of Michipicoten
Canada cliff 300 ft high is a soft
amygdaloidal bed containing Native
Copper. Traceable some Miles - in this bed
an attempt was made number yrs ago to work
a remarkable ~~bed of~~ deposit of Native Cop -
with grains native Silver dessemnate through
gaun composed of Hydrous Silicate of
Nickel. - ore was stamped + Ni ore the
Value of which not then Known washed
away - leaving residue Metallic Ag + Cu
Shaft was sunk to depth 12 fathoms but
after considerable outlay wkgs abandoned

Get Wendt on the pyrites
deposits of the alleghanies

Process by Sudbury ores -

Powder to 120 mesh separate pyrotite, then roast to make Calcopyrite magnetic.
then put Ni & Cu Sulphides into Brix seperately using Say 20 30 50 & 75 pct of fine 100 mesh Connellsville Coal - See if Sulphur all goes off as BiSul Carbon & there is Bricking - also bring up high to make Sponge flat it under Hammer also fuse —

E

Have Dixon try following

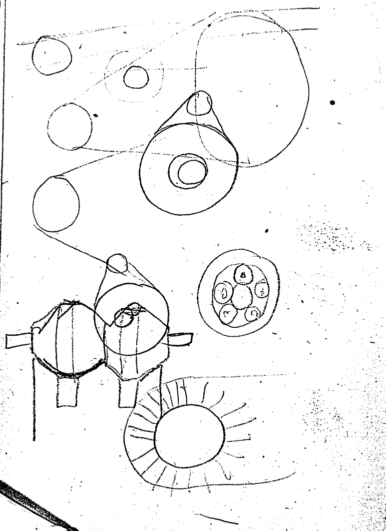
Roast a Calcopyrite until
all magnetic - then dead roast
until all nonmagnetic
then with fine coal or
reducing flame again
roast to make it magnetic
If this works can get a
double twist on some
ores & also roast Calcopyrite
& Iron pyrites. under same conditions
see which becomes magnetic first
or if Calco can be easily roasted
to magnetic without effecting
pyrite

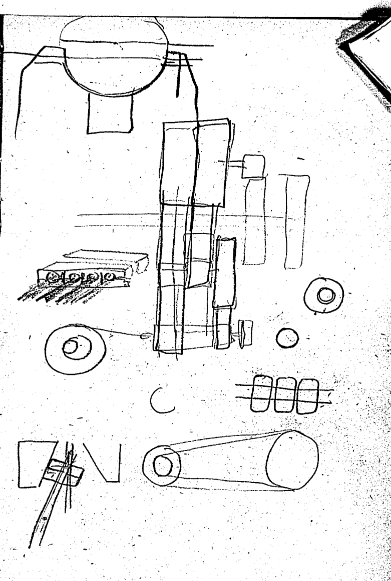
Nickel Mine Warren Co N Jersey
at Brass Castle mine named Witty Mine
operator. C F Staates - producin in 1880
nothing -

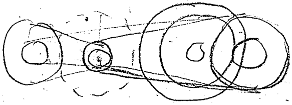
Nickel Mine operated 1880 by
Draent Nickel Mining Co - Location -
Draent Middlesex Co Massachusetts
product in 1880 - 13400 lbs —

Mica Mine - Broadway
Warren Co N J. named Broadway
Mica Mine - Operator J C Merrill
no product in 1880 -

~~Duck~~ Virginia Cop belt. Ore Knob
Vn Gangue principally Magnetic pyrites &
quartz leaving Calcopyrite
1 pct Nickel in ore







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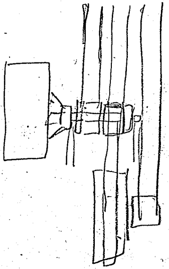

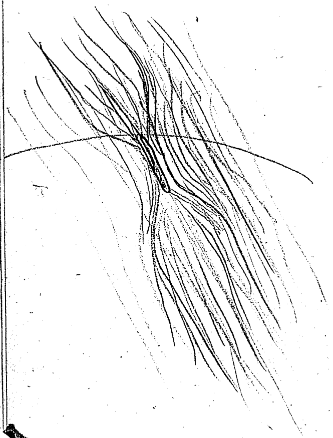

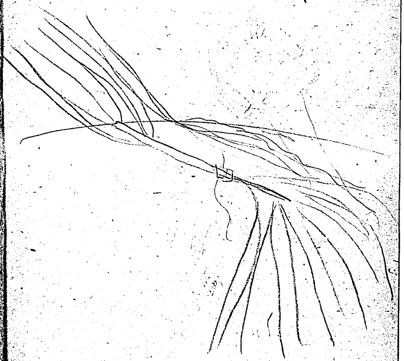

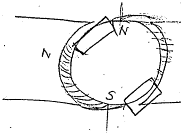

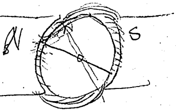

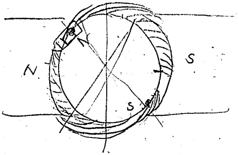

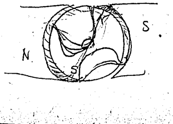

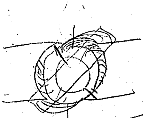

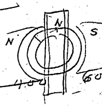

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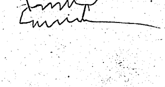

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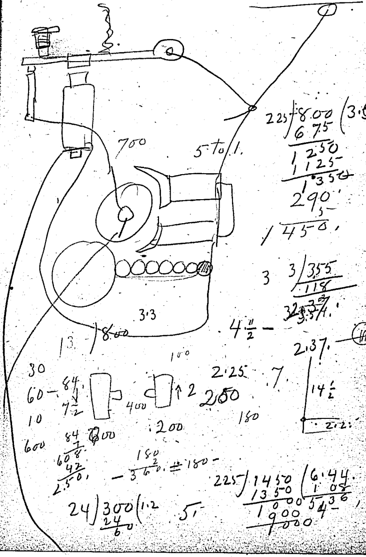

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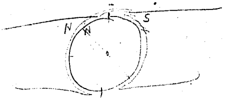

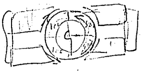

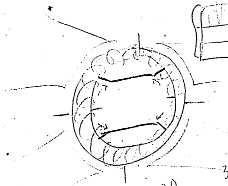

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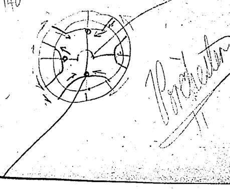

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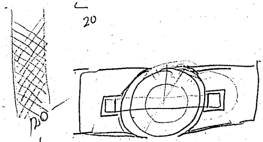

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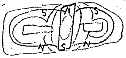

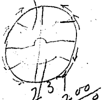

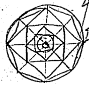

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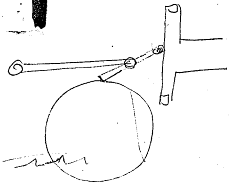

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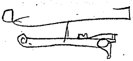

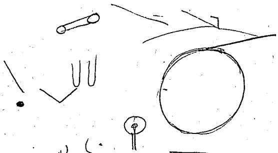

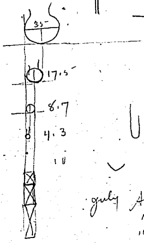
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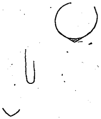

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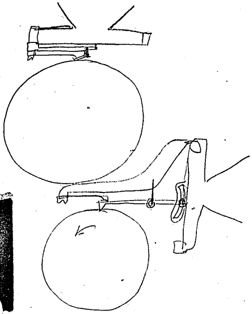

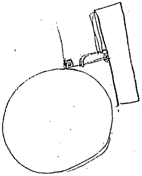

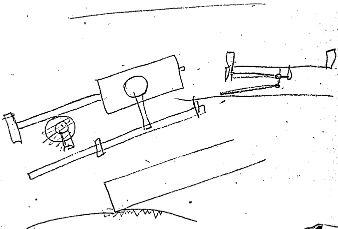

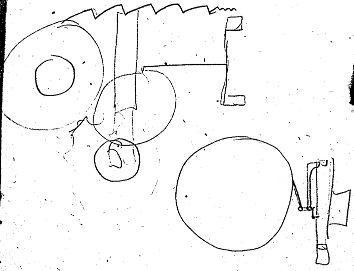

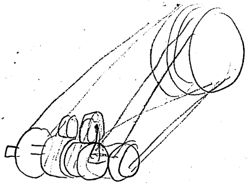

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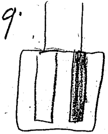

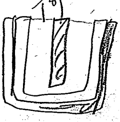

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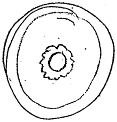

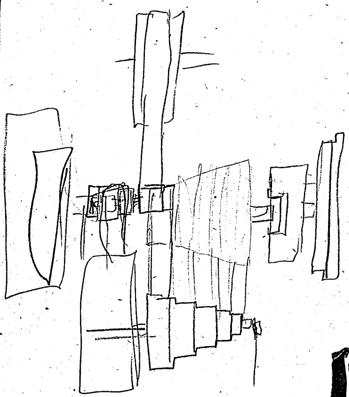

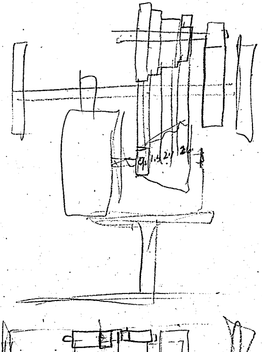
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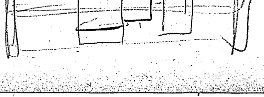

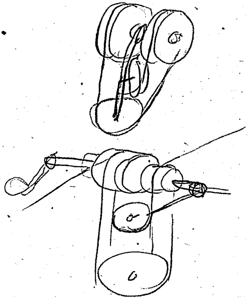

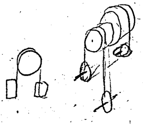

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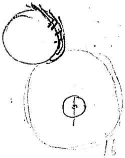

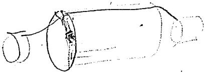

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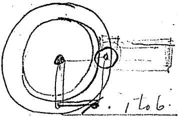

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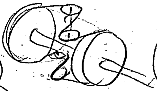

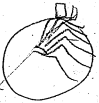

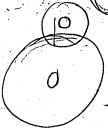

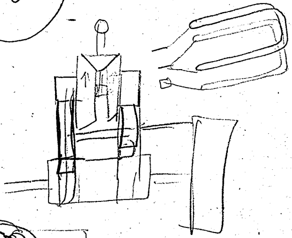

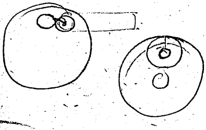

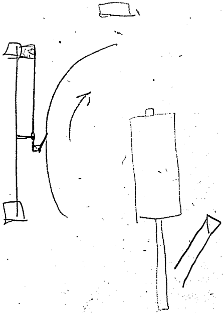

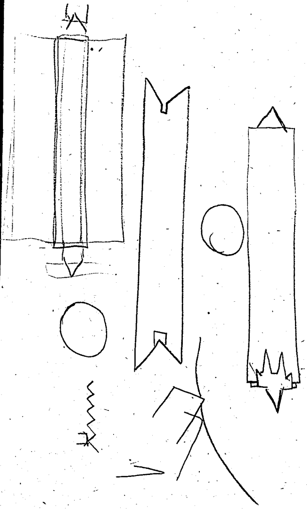

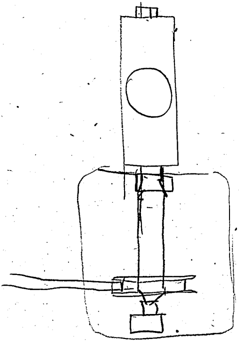

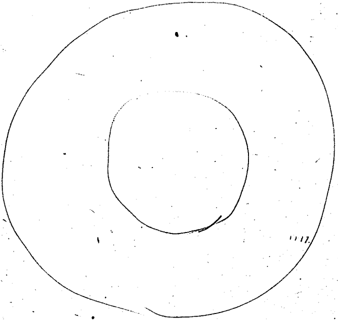

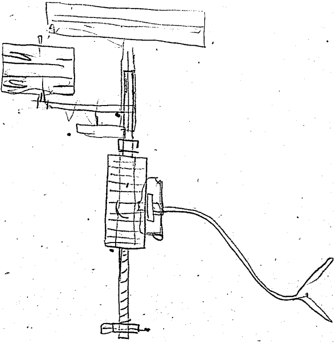

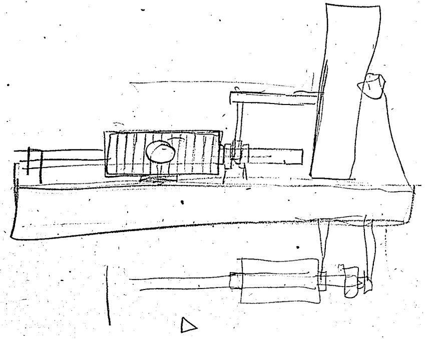

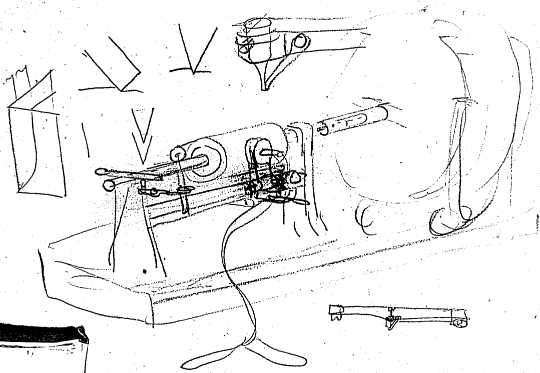

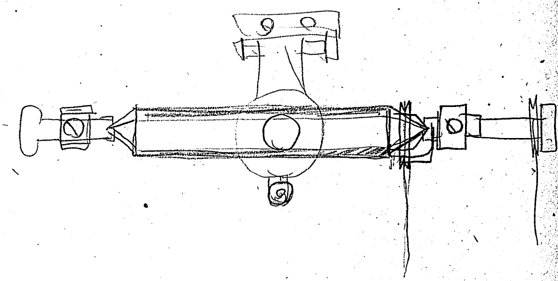

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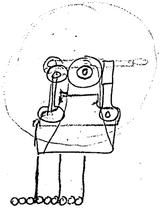

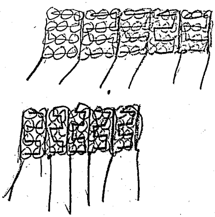

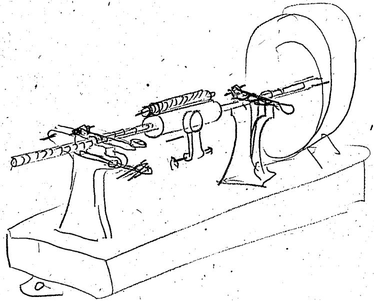

Mch 15 — 191

Iron Expmt,

Chloride Ammonia
Sulphate "
Carbonate "
Borate, "

Sodium Amalgam -
Anhydrous Caustic Soda
Carbonate Soda

Lining Ladle with Marble
make CO_2 which rushing
thro Iron reduced CO -

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7164
17910
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32

Iron Expts — mch 15.91

Mixture 1 pt Bichrom Pot — 2 Chl ammon
heating gives Nitrogen —

Sodic Nitrate —

Iron pyrites :

Sulphide Potash —

Cyanide Potassium

Sulphate Barium

Magnesic Sulphate look
out for water,

Sulphate Potash no water
contains H_2O —

~~Bisulphate or~~

Strontia Sulphate no Water

phosphide of Iron -

Urinium

Malybdenum, - Sulphide
also of Lead -

Arsenic

Tungstan

Chromium

Cerium

Manganese

Black oxide Manganese
in pot also Crucible

Anhydrous Sulphate of
Iron at Faraday

Oxide of Lead – say Litharge
– large dose –

Baryta is sulphate Ba

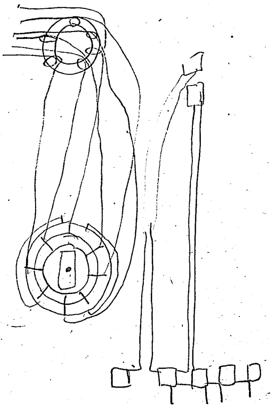
Baric Carbonate high heat to
Decomp –

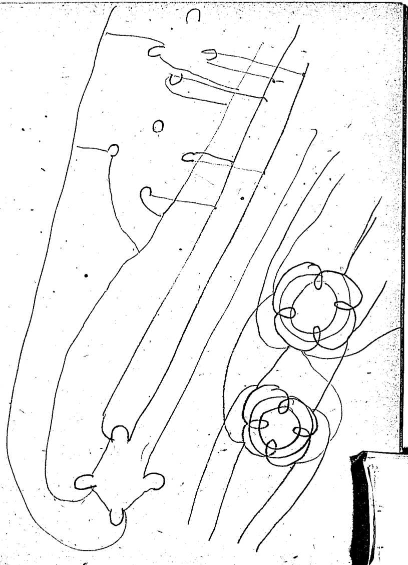
Zinc Sulphide -

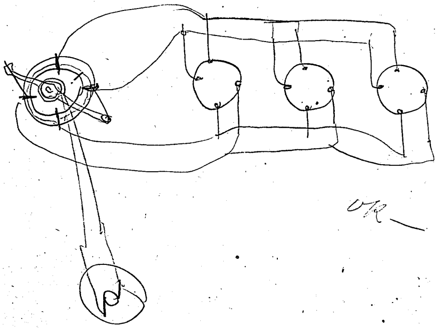
Oxide Zinc -

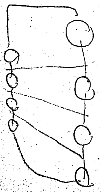
Nickel –

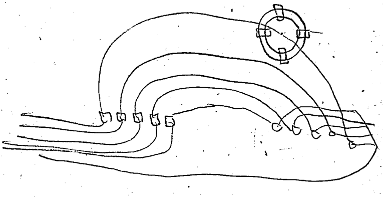
Uranium Yellow a
pigment (Comel)

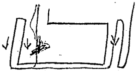


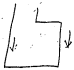


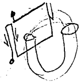


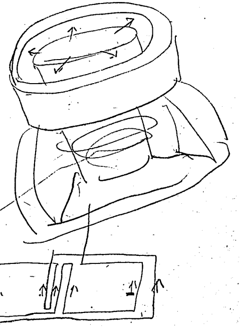


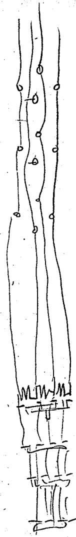


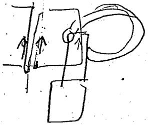


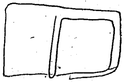


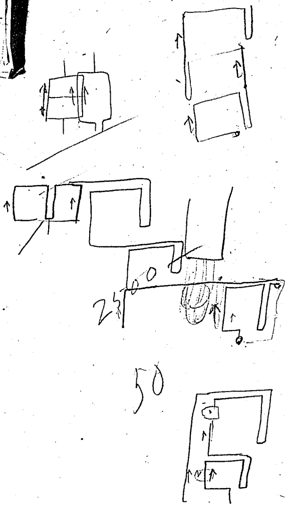








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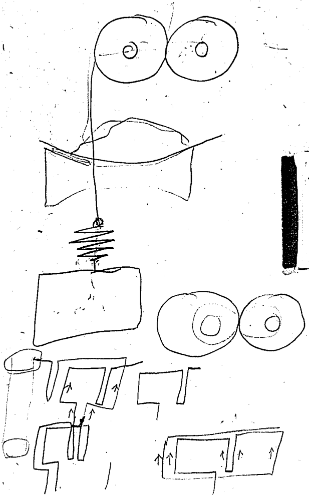

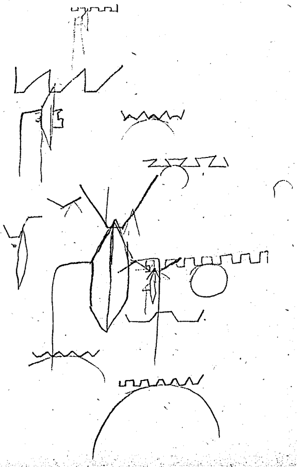

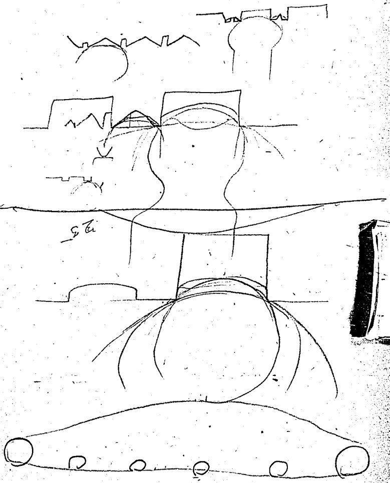

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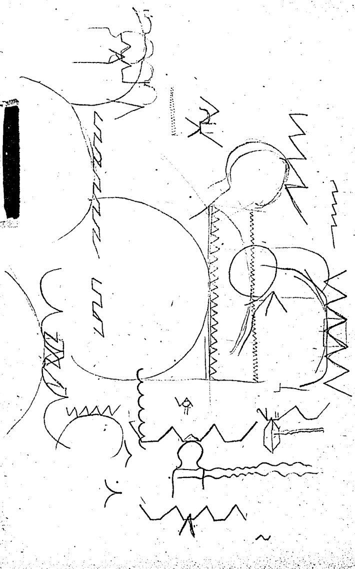

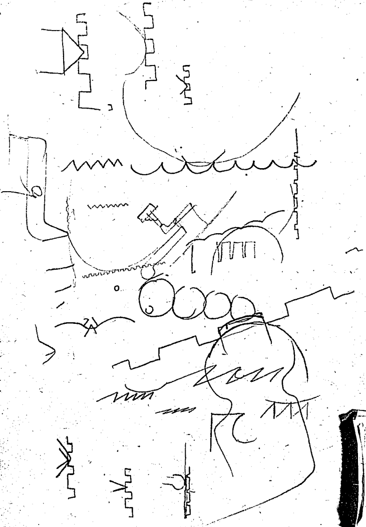

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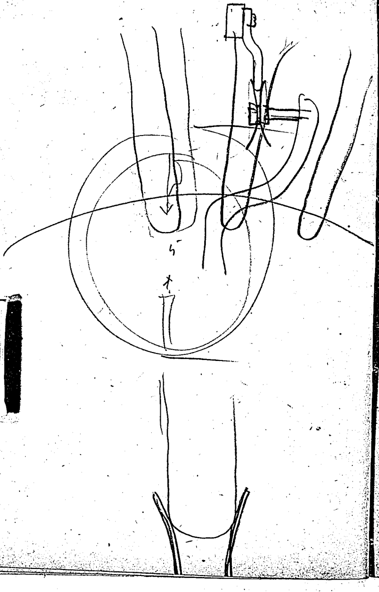

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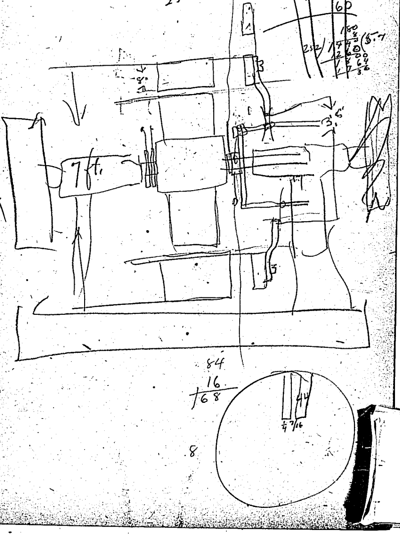
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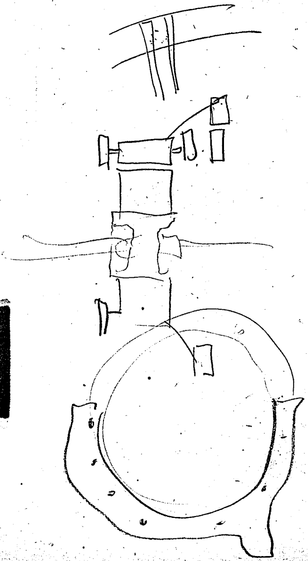

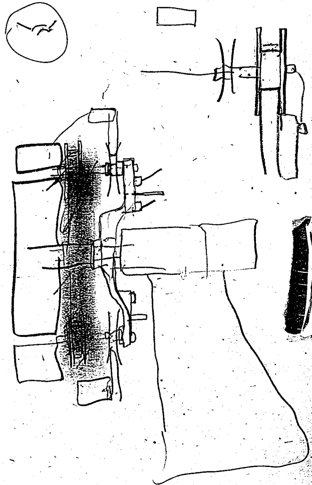

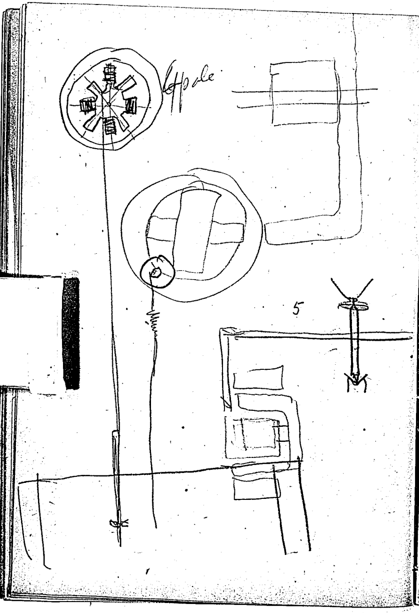

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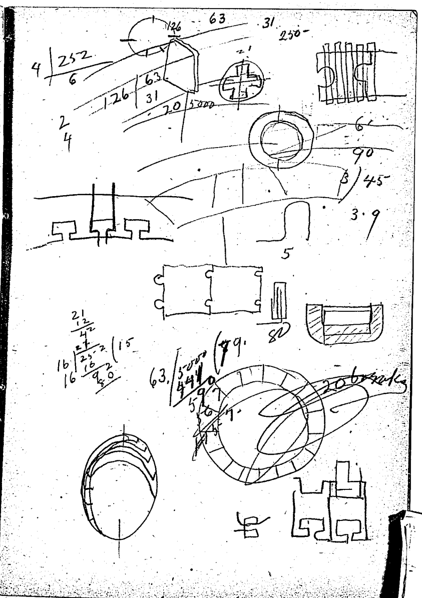

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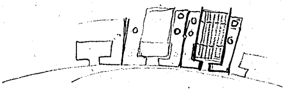

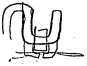

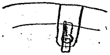

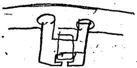

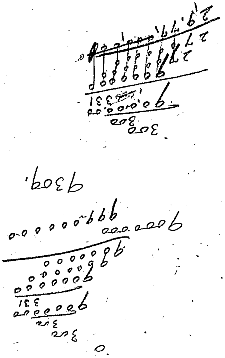
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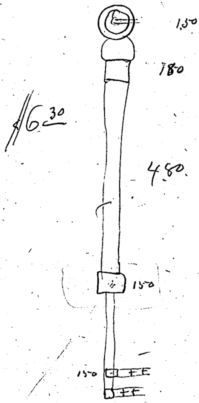
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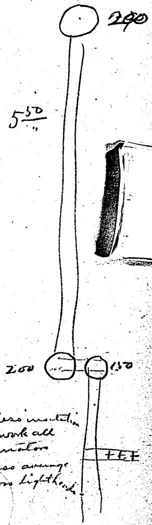
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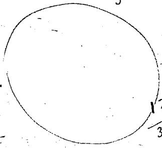

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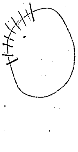

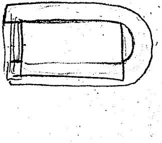

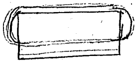

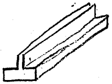

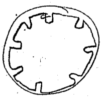

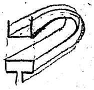

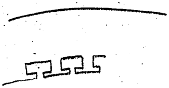

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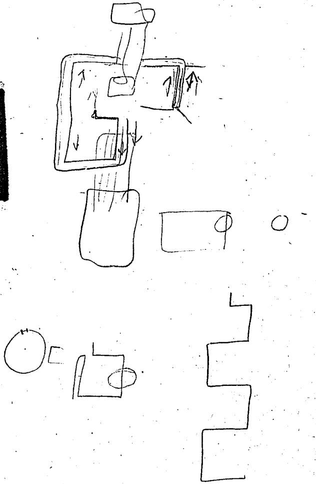

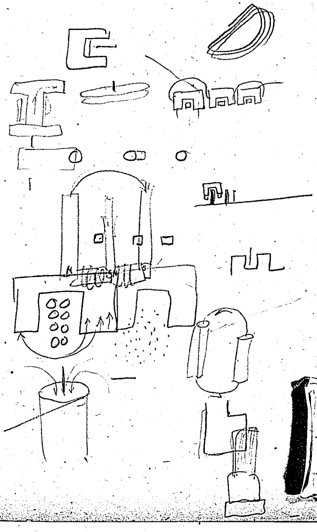

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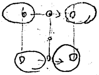

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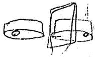

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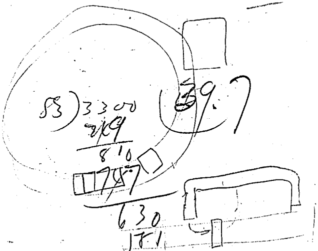

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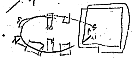

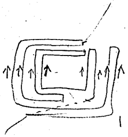

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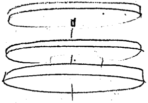

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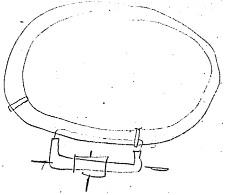

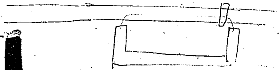

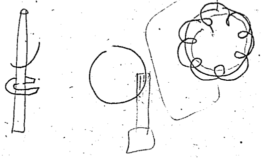

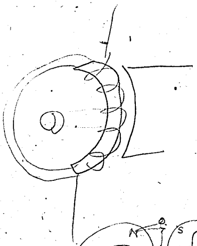

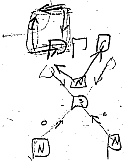
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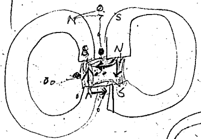
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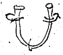

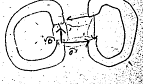

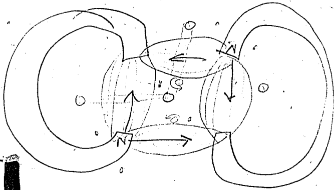
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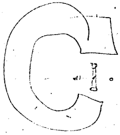

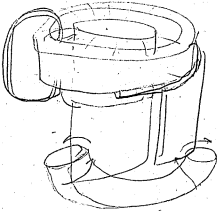

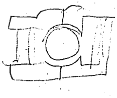

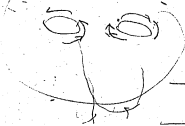

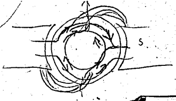
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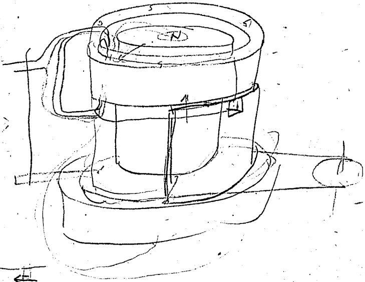
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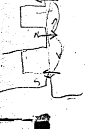
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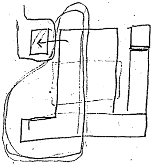

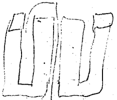

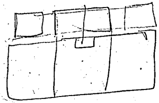

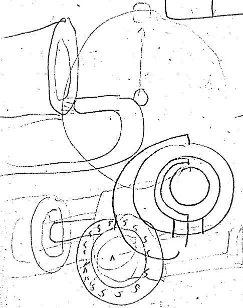
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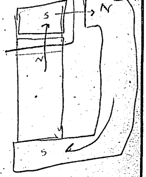
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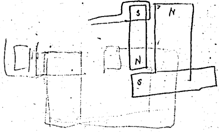
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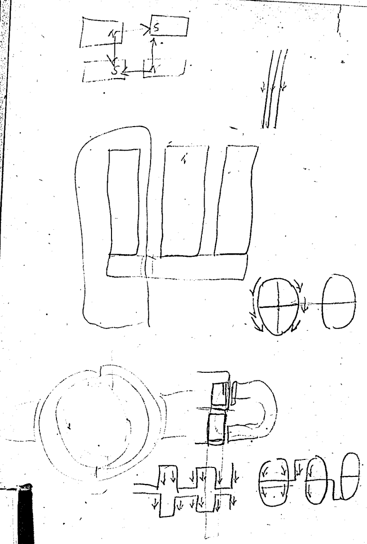
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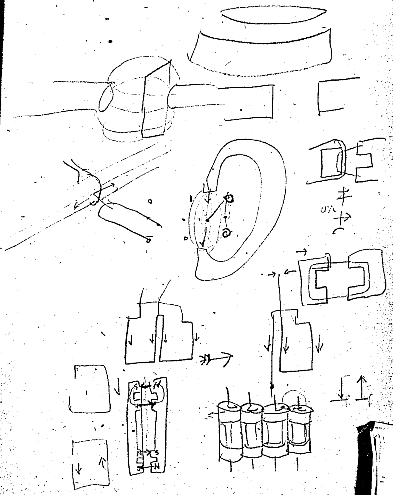
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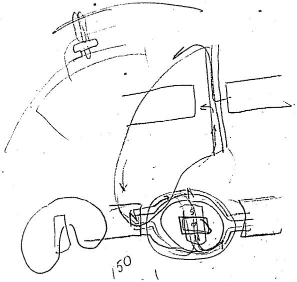
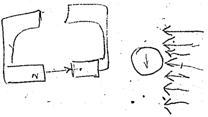
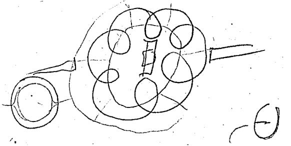


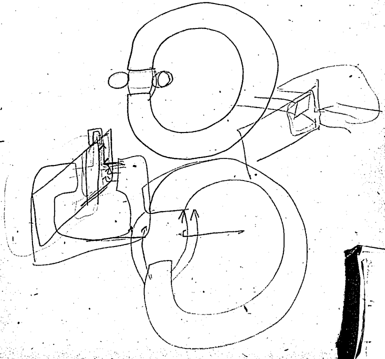
150

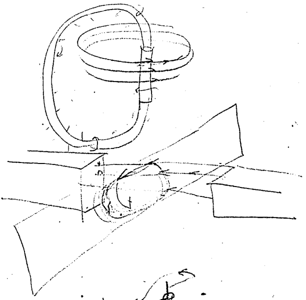
.16

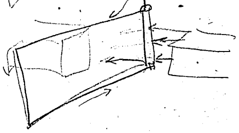
12000-











202
4
808
40000
32320000
3232

32 320 000

1,800,000 - 1 ft
3,600,000 6"
7,200,000 3"
14,400,000 1.5

5000

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322
644
644
966
103684
5000

64) 518,470000 (8,100,000
512
64
64

810,000

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625
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(99,1000000

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6
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12) 204 60 (2125 (35.4
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2625
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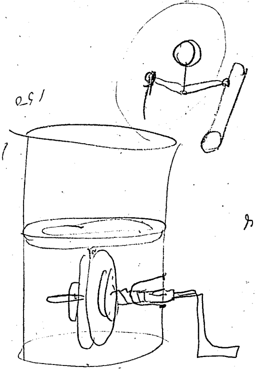


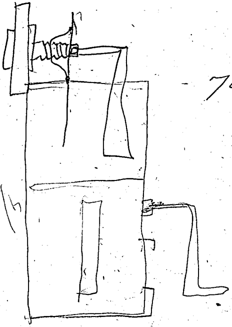
10-

15-

750-

75-

6



700-

20	material	150
15	Labor -	60

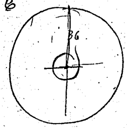
10-
15
25

10.

25
15
40
4
44
53

53-

72
3
216



70
3
210

5

131
15
655
40 – 131
1965
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18
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2305

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1056
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644) 800000 (1,242,2305
644
1560
1288
2720
2576
1440
1288
1520
1288
232

60) 1965 (32.7
180
165
120
45

2,500,000
1000
12000
96000

60) 2187.5 (36.4
180
387
360
275
240
35

216
125
1080
132
46

210
125
1050
420
210
2625

12) 2700 (2250
24
30
24
60

327
327
2289
654
981
1069.29

60) 2250 (37.5
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12) 26250 (2187
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40000000
950000000

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37.5 36.4

216 – 2250 – 37.5
210 2187.5 36.4
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198 2062.5 34.37
192
186
180
174
168

70
3
210

66
3
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68
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18
12
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216

60)2400 (40

20000
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4508
4120
3864
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1932
6280
5796
4840
52

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2
1,552,794

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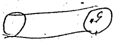
23

50 Red
750 ft speed
15
50
750

1½ in

36 ½



7" belt

318/544(1
318
226.

150

1800

1800 -

1200

16
20000 (9.H
33000) 320000
297000
23000

18 HP

35

3300) 1,200 000 (36
99000
210000

12.000

20 000
3000
60,000,010

3

33000) 781,253 (24 HP 1 min
66000
121253

781 253

1930 ft min

20) 781253 (39,062
60
181
180
125
120
53

100 000

64) 5000 (781,253
448
520
512
80
64
168
128
320
320
0

200000
2500
1000000
400000

1500
500

50
50
2500

16 ft - 32 ft velocity
60
1920

20000 9000
180000 1000

322
60
19320

336 -

~~36666~~
~~6733~~
~~29933~~
~~65~~

3 / 55000
18333

(9.10

~~5) 33666~~
~~6733~~

2000) 18333
18000
333 30

(1.119

2000) 29933
20000
9933
~~6000~~
193 30

50. cost sold 150 —
5 freight — possible
profit $95 — to agent
~~100~~
who personally sells it
$35 from 95
35
60 — left.

~~Advertising~~

Basis of sales 2000 1st
year profit 120000 —
general Expense of NA ~~of~~
65000 — leaves 55000
profit — of this 33 1/3 % to

Local Co — 18333 —
leaves 36,666 to
NA — 20% Com from this
6733 leaves 29933
net to Namen —
this on 2000 Machines
is $9.10 per machine to
Local Co & 14.90 to Namen —

in case trouble with grapho
any royalty we may be
compelled to pay be deducted
from these sums in proportion
~~Supplies~~ — Rentals
to be abandoned as soon
as possible ~~after~~
Rental Contracts are ended
but in meantime

NAmcn is to attend to
the same where practicable
& after deducting Costs
of maintenance &c. to
divide the profits ~~of~~
from rentals 33% to Local
66 to NA—

Nickel in Slot, same
way —

Supplies—

Local agents to get
20% profit on Supplies
for attending to business

Of the profit left
40% is to be deducted

5.)16
3

as general Expense for
Conducting NA Co & ~~20%~~
Com ~~to genl agt &~~
~~bal due bal~~ & bal
net profit divided
33 to Local 66 to NA

for instance, Cost of a
Cylinder 10 cents.
freight 1c Total 11c
Sold at 25 cents to
Consumer 20% of this to
Local agent is ~~30~~ 5c leaving
20c deducting 11
~~12.8~~ 20c
11 Cost leaves
9

9 profit deducting 20% gene
Exp for NAmcn or 1.8c ~~3.6~~ leaves
~~5.4~~ 7.2 divided 33 to Local 66 NA

or 2.4 to Local 4.8 to N Amer
other Supplies figured same
way

Thus the proportions are
33% to Local 66 to NA
but from the 66% 20%
Com is paid or net 53% to
N Amer —

66
13
53

5)66
13

All musical Records
~~Except~~ to be sold at
uniform price ~~East of~~
~~Denver to~~ the public

~~4.00 — [illegible] [illegible] [illegible] [illegible] [illegible]~~
from say
for 50 cents. ~~plus freight~~
~~Cost~~ Cost now 33 but can
be got to 30 c ~~at~~ factory
~~Leaving freight 3 cents~~
~~Leaves~~. Leaves 20 ~~%~~
cents profit. this to be
divided just as profit
on blanks are divided

Same area White mountain or Quint mine

Alden Miner pasture Lot mine

3)72
2.4

5)90
1.8
7.2

90
36
5.4

3)5.4
1.8

160
32
12.8

near house Mr Little, (E Parker) Cupron shales

do near W Littleton PO –

Albee mine – (Extension Gardner Mt Vein)

Little mine –

another mine 125 ft E of Albee Mine

Way & Mason openings further north

Dodge mine

Dodge & Lisbon G mining Cos

Dow mine in the Conglomerate

Gordon mine "

Bedell gold mine

Atwood gold mine

Wurz amer Jour Sci 1858
+ Silliman's Jnl 1859 says in
Lincoln + Gaston Co NC
Ni + Cu ores especly abundant
on western Slope Cross Mountain -
Covered with gossan

Nickel Mine at Brass Castle
Warren Co NJ named Witty
mine Oper C F Staats,

Nickel Mine, Dracut Mass
operated in 1880 produced 13000 lbs
Location Dracut Middlesex Co
Mass.

Ore Knob Ka mine 1% Ni in ore
gangue pyrotite Quartz + Calcopyrite

Ammonoosuc Gold field -
Geo of NH p 272 = Bounded on W
by Conn River N by Town of Dalton
E+S by gneissic area or from W
border to Bethlehem thro E parts
of Lisbon + Landaff

This embraces whole of Towns
of Littleton, Monroe, Lyman, Bath, +
part of Haverhill Landaff + Lisbon
clay slate occup 2 lines separated by
Lyman group the more eastern one is
auriferous.

Atwood gold mine 1 m E of Lisbon
Village NH =
auriferous conglomerate as in the belt.
The clay slate "East of Village Lisbon
1500 ft thick Carbon quartz veins
Dodge Mine yields 15 @ 25 per ton
all suggests he say same horizon as
Gardner Mountain Cu + Pb is
generally disseminated in shists near
Lisbon Village Cu mine opened further
at Bald Ledge Cu shists have been
opened in 2 places
in same field - NH gold mine - also in quartz
over 1000 ft long - Later
New England Reduction Co, in conglomerate

pyrites deposits Louisa Co Va Vol 12 Mining Engrs
p 527. – Map –
article says – deposits found Va near Lynchburg – Md Cecil Co
Anthonys Nose NY – this is pyrotite, near North Adams Mass.
Milan copper mines NH, Blue Hill Me Vershire & Corinth Cos Vt,
Capelton & Bolton Canada.
Ducktown Tenn Carroll Co Va Rowe mines Mass
Brockville Canada – gold & silver & Cu invariably
accompany these pyrites – quartz veins invariably
near these deposits Contain gold

Louisa Co mines – 60 miles from ~~tide water~~ at Richmond
130 m fm Newport news

Ore Knob Mine NC.

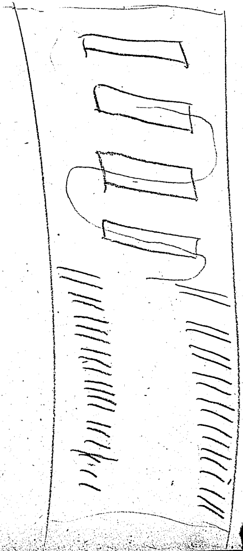
Tallapoosa Cu Mine Ga   Stone Hill Sulphur

mine Ala –

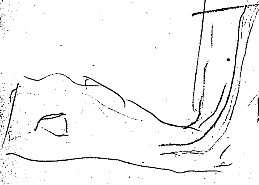
Charlemont Mass – & Louisa Co dont Carry
much Cu –

Liberty Mines Md – Copper bearing States
~~[illegible]~~ & Sandstone of Pa & NJ –

Clay & Coosa Co US Geo Survey 1882
immense quant pyrotite Carrying 10% Cu.
not very accessible –
Iron ores at Antwerp NY Contains Ni



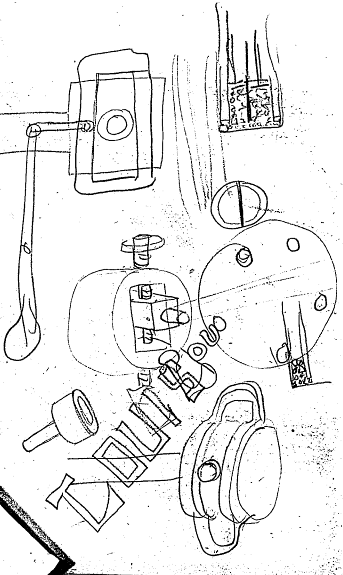
Revision every year in
this proportion —
Books open to auditing)
affirm each Co —

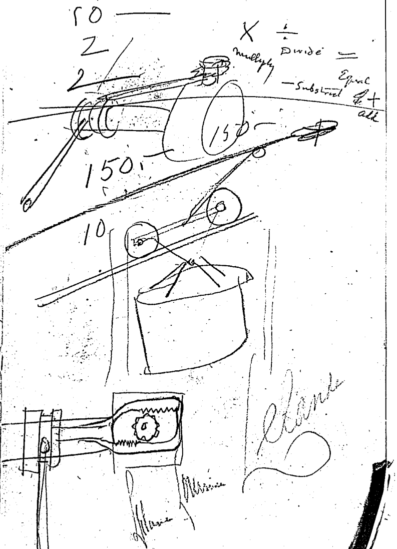


180
2
360
4
1440
12
17280

8
50
33
83

We do all the buying
We sell phono 150
plus frt — We p
Com 30 to
sell + 20% on
supplies We pay
20% Com to Genl
Agt on net profit
~~to N American~~ bal profit
~~no 65~~ goes 50/83 to NA
33/83rd to Local —
Cost phono 50 — Cylinders 10 —
Music 30 —




50
2
2
X ÷
multiply
Divide =
Equal
— Substract
+
add
150
150
10